



U.S. DEPARTMENT OF
ENERGY

OFFICE OF
SCIENCE

DOE/SC Status Review

of the

Long Baseline Neutrino Facility/Deep Underground Neutrino Experiment (LBNF/DUNE) Project

Fermi National Accelerator Laboratory

March 20-22, 2018

Stephen W. Meador

Committee Chair

Office of Science, U.S. Department of Energy

<http://www.science.doe.gov/opa/>



- **Closeout report (prepared in PowerPoint)**
 - Presented Thursday, March 22
 - Instructions—slide 11
 - Template—slide 13
- **Final report draft (prepared in MS Word)**
 - Due Monday, March 26 to Casey
(casey.clark@science.doe.gov)
 - Instructions—slide 12



DOE EXECUTIVE SESSION AGENDA

Tuesday, March 20, 2018—Comitium (WH2SE)

- 8:00 a.m. DOE Executive Session..... S. Meador
- 8:15 a.m. Program Perspective..... M. Procario
- 8:30 a.m. Federal Project Director Perspective..... P. Carolan
- 8:45 a.m. Questions
- 8:55 a.m. Adjourn

Project and review information is available at:

OPSS Website: <https://web.fnal.gov/organization/OPSS/Projects/LBNFDUNE/SitePages/DOE%20Independent%20Project%20Review%20of%20LBNF-DUNE,%20March%202020-22,%202018.aspx>

Project Review Site: <https://web.fnal.gov/project/LBNF/ReviewsAndAssessments/DOE%20Independent%20Project%20Review%20of%20LBNF-DUNE%20Mar%202018/SitePages/Home.aspx>

Username: review

Password: dunurev3!



Review Committee Participants

Stephen W. Meador, DOE/SC, Chairperson

SC1

Beamline

* Mats Lindroos, ESS
Bob Garnett, LANL

SC2

Detectors

* Harry Nelson, UCSB
Kevin Lesko, LBNL
Blair Ratcliff, SLAC emeritus

SC3

Cryogenic

* Matt Howell, ORNL
Kelly Dixon, TJNAF

SC4

Conventional Facilities

* Jack Stellern, SLAC
Adrienne Carney, U of Pitt
Chris Laughton, TechSource Inc.

SC5

Environment, Safety and Health

* Ian Evans, SLAC
Frank Kornegay, retired ORNL

SC6

Cost and Schedule

* Ron Lutha, DOE/CH
Mike Fenn, DOE/PM
Jennifer Fortner, ANL
Frank Gines, DOE/ASO

SC7

Project Management

* Jim Krupnick, retired LBNL
Kurt Fisher, DOE/SC
Gil Gilchriese, LBNL
Lynn McKnight, TJNAF

Observers

Jim Siegrist, DOE/SC
Mike Procario, DOE/SC
Ted Lavine, DOE/SC
Bill Wisnieski, SLAC

Adam Bihary, DOE/FSO
Mark Bollinger, DOE/FSO
Pepin Carolan, DOE/FSO
Mike Weis, DOE/FSO

LEGEND

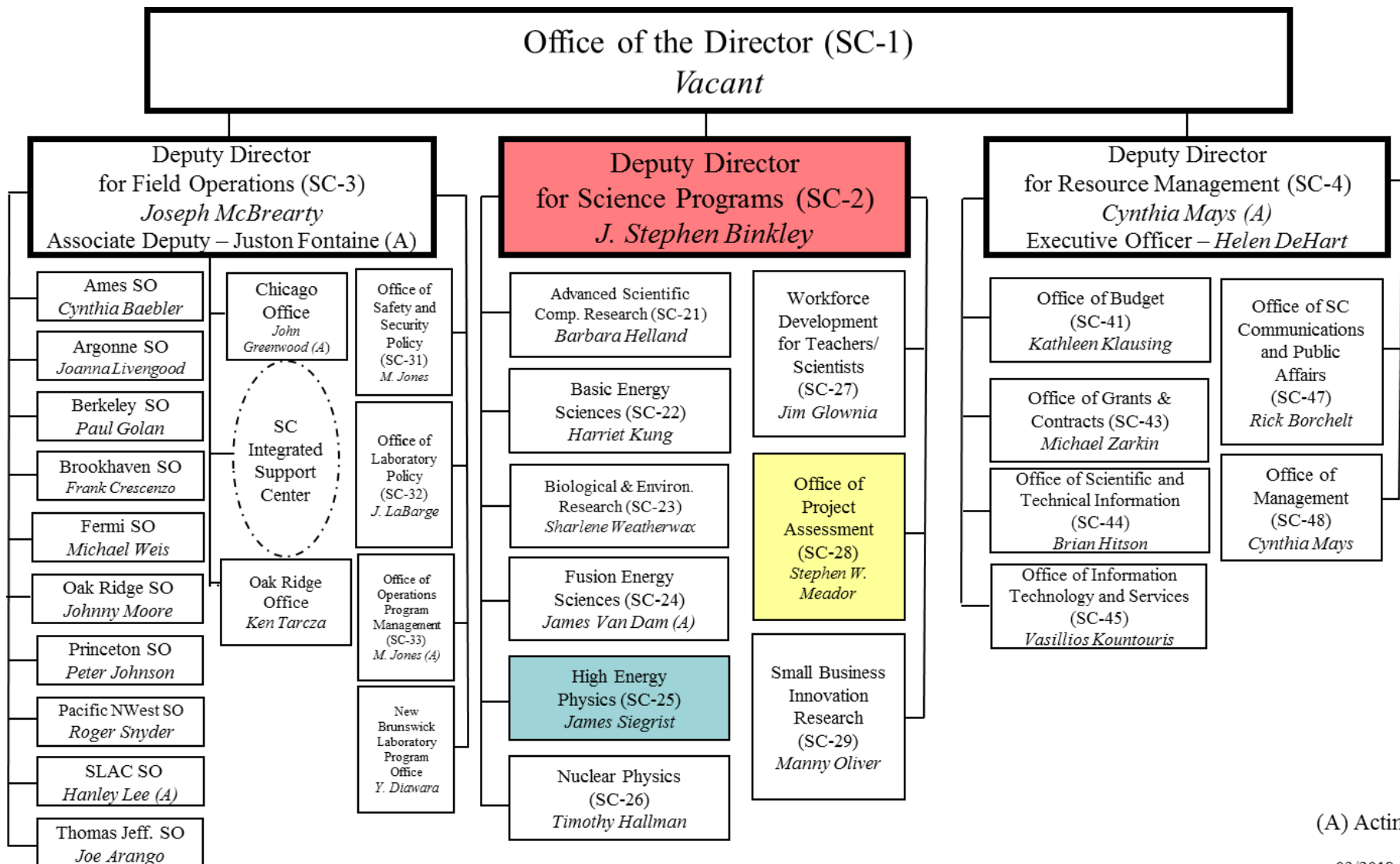
SC Subcommittee

* Chairperson

Count: 21 (excluding observers)



SC Organization



(A) Acting



1. Is the project making sufficient progress to give confidence that CD-2 can be achieved by December 2019? Are there adequate resources in place to complete the work needed for CD-2?
2. Is the DUNE collaboration's plan to complete its technical design by CD-2 reasonable and achievable? Have they identified the resources needed to carry out that plan? Has Fermilab provided the technical and management support to the DUNE collaboration consistent with its host lab role? In particular, assess the progress by US DUNE in defining US contributions to the DUNE experiment.
3. Is the program to construct, install, and operate prototype liquid argon TPCs at CERN making appropriate progress to inform the DUNE design?
4. Is the work on the scope approved at CD-3a proceeding as planned? Are procurements being executed in an efficient and timely manner?
5. Are the requirements, the design and the interfaces pertaining to the far site conventional facility CD-3a scope under effective configuration control and management?
6. Are all ES&H organizations, plans, and resources adequate to effectively address all aspects of ES&H for all project activities at all project locations?
7. Is the LBNF/DUNE project being appropriately and effectively managed, including risk and contingency? Does the tailoring strategy provide concrete benefits in lowering the risk or cost and improving the schedule without significant management complications?
8. Has the project responded appropriately to recommendations from past reviews?



Tuesday, March 20, 2018

- 8:00 am DOE Full Committee Executive Session—**Comitium (WH2SE)**..S. Meador
- 9:00 am Welcome/Plenary Sessions—**One West (WH1W)**
Welcome N. Lockyer
- 9:05 am LBNF/DUNE Introduction and LBNF Management C. Mossey
- 9:45 am DUNE Collaboration & ManagementM. Thomson
- 10:25 am Break
- 10:40 am DUNE Project Status Update E. James
- 11:20 am LBNF/Project Status UpdateE. McCluskey
- 12:00 pm Lunch—**WH2xover**.....
- 1:00 pm Subcommittee Breakout Sessions
Management/Cost/Schedule/ESHQ - Comitium (WH2SE)
Conventional Facilities - TBD (WH##)
Beamline – TBD (WH##)
Detectors – TBD (WH##)
Cryogenic Infrastructure – TBD (WH##)
Cost/Schedule – TBD
ESHQ - TBD
- 4:15 pm DOE Subcommittee Session- **in breakout rooms**
- 5:00 pm DOE Full Committee Executive Session- **Comitium (WH2SE)**
- 6:30 pm Adjourn



Wednesday, March 21, 2018

- 8:00 am Parallel Subcommittee Breakout Sessions- Continued in same rooms
- 10:15 am Break
- 10:30 am Answers to Reviewer Questions – **Comitium (WH2SE)**
- 12:00 pm Working Lunch—**WH2xover**
- 1:00 pm DOE Subcommittee Session- **in breakout rooms**
- 4:00 pm DOE Full Committee Executive Session-**Comitium (WH2SE)**

Thursday, March 22, 2018

- 8:00 am DOE Full Committee Executive Session/Report Writing-**Comitium (WH2SE)**
- 10:00 am Break
- 10:15 am DOE Full Committee Executive Session/Dry Run-**Comitium (WH2SE)**
- 12:00 pm Closeout- One West (WH1W)
- 1:00 pm Adjourn



Executive Summary/Summary (2-page) Report.....	Fisher*
1. Introduction	Lavine*
2. Technical Systems Evaluation (Charge Questions 1, 2, 3, 4, 5, 8)	
2.1 Beamlines	Lindroos*/SC-1
2.1.1 Findings	
2.1.2 Comments	
2.1.3 Recommendations	
2.2 Detectors	Nelson*/SC-2
2.3 Cryogenic	Howell*/SC-3
3. Conventional Facilities (Charge Questions 1, 3, 4, 5, 8).....	Stellern*/SC-4
4. Environment, Safety and Health (Charge Questions 1, 6, 8).....	Evans*/SC-5
5. Cost and Schedule (Charge Questions 1, 7, 8)	Lutha*/SC-6
6. Project Management (Charge Questions 1, 2, 4, 5, 7, 8)	Krupnick*/SC-7

*Lead



Closeout Presentation and Final Report Procedures



(Use PowerPoint / No Smaller than 18 pt Font)

2.1 Use Section Number/Title corresponding to writing assignment list.

List Review Subcommittee Members

List Assigned Charge Questions and Review Committee Answers

2.1.1 Findings – What the project told us

- In bullet form, include your account of factual technical, cost, schedule, and management. Information provided/presented by the Project

2.1.2 Comments – What we think about what the project told us

- In bullet form, include your assessment of project status (observations, concerns, feedback, suggestions, etc.) based on the findings. This section carries more emphasis than the Findings, but does not require an action as do the Recommendations. Do not number your comments.

2.1.3 Recommendations – What we think the project needs to do

1. Beginning with an action verb, provide a brief, concise, and clear statement with a due date.

For Critical Decision reviews, include a specific recommendation addressing how the Committee judged the readiness for the CD, *i.e.*:

- The project is ready to proceed to CD-2; *or*
- The project is ready to proceed to CD-2, after addressing the following recommendations



Format: Final Report

(Use MS Word / 12pt Font)

2.1 Use Section Number/Title corresponding to writing assignment list.

2.1.1 Findings – What the project told us

Include a brief narrative description of technical, cost, schedule, management information provided by the project. Each subcommittee will emphasize their area of responsibility.

Cost and schedule subcommittee should provide attachments for approved project cost breakdown and schedule. Management subcommittee should provide attachment for approved project organization and names of personnel.

2.1.2 Comments – What we think about what the project told us

Descriptive material assessing the findings and making observations and conclusions based on the findings. **The committee's answer to the charge questions should be contained within the text of the Comments Section.** Do not number your comments.

2.1.3 Recommendations – What we think the project needs to do

1. Beginning with an action verb, provide a brief, concise, and clear statement with a due date.
- 2.

Please Note: Recommendations are approved by the full committee and presented at the review closeout briefing. Recommendations SHOULD NOT be changed or altered from the closeout report to the Final Report.



Closeout Report on the DOE/SC Status Review of the

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- **Findings**
- **Comments**
- **Recommendations**



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PROJECT STATUS		
Project Type	MIE / Line Item / Cooperative Agreement	
CD-1	Planned:	Actual:
CD-2	Planned:	Actual:
CD-3	Planned:	Actual:
CD-4	Planned:	Actual:
TPC Percent Complete	Planned: _____%	Actual: _____%
TPC Cost to Date		
TPC Committed to Date		
TPC		
TEC		
Contingency Cost (w/Mgmt Reserve)	\$	_____ % to go
Contingency Schedule on CD-4b	_____ months	_____ %
CPI Cumulative		
SPI Cumulative		



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